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United States Department of Agriculture

Economic Research Service

Foreign Agricultural Economic Report Number 213

Developmental Consequences of Unrestricted Trade

Thomas Vollrath

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Developmental Consequences of Unrestricted Trade, by Thomas Vollrath. International Economics Division, Economic Research Service, U.S. Department of Agriculture. Foreign Agricultural Economic Report No. 213.

Abstract

International trade, unencumbered by protectionism, stimulates economic growth in both developed and developing countries. This study examines the fundamental economic forces which determine how trade affects development and growth. Undistorted trade is a catalyst to economic growth because it unleashes market forces which promote development.

Keywords: International trade, comparative advantage, development, growth, developing countries, U.S. agricultural exports, U.S. agricultural trade policy.

Acknowledgments

The author appreciates the encouragement and constructive suggestions of Lon Cesal and Mathew Shane. He thanks Jim Carlin for editorial review.

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May 1985

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Summary

International trade, unencumbered by protectionism, stimulates economic growth in both developed and developing countries. This study, which examines the fundamental economic forces that determine how trade affects development and growth, shows that undistorted trade becomes a catalyst to economic growth by unleashing market forces which promote development.

International trade is an engine of domestic growth because of the economic synergism generated whenever exchange takes place. Economic synergism occurs when combined domestic wealth created by trading countries is greater than the sum of their wealth generated in isolation.

Exposure to the international market fosters both development and growth because it results in improved resource use, additional economies of scale, more innovation, wider diffusion of modern technology, lower domestic commodity prices, and increased commercial availability of a wider variety of consumer goods. Integration into the global economy enables countries to become better able to use not only national resources but to take advantage of differences in the availability of production inputs, technologies, and changing commodity demands throughout the world. Moreover, increased reliance upon the international market can promote economic stability because world output, especially in agriculture, fluctuates less than individual country production.

During the 19th century, international exchange provided the impetus to the development and growth of Great Britain and other Western industrialized nations. More recently, it spurred economic growth in developing countries pursuing outward-oriented commercial policies during the 1960's and 1970's.

Market interference causes distortions which camouflage the pattern of comparative advantage and disrupt economic growth. Progress toward liberalizing trade, especially in agriculture where protectionism has risen since World War II (unlike in manufacturing), would improve the efficiency with which resources are used throughout the world.

In a more open and dynamic international environment for agriculture than today's, some farmers in both the United States and in developing countries may have to reallocate their resources and produce a different mix of agricultural commodities. Despite the adjustment difficulties, efforts to establish closer links to the international market and attempts to become more responsive to the world economy will benefit the consumer.

The importance of unrestricted trade is that it reveals a country's comparative advantage, enabling market forces to guide efficiently both domestic and foreign economies, resulting in more rapid growth of real income. Hence, the trading relationship the United States establishes with other countries is crucial for future economic interests, affecting growth not only abroad but throughout the U.S. economy and most notably in agriculture.

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Developmental Consequences of Unrestricted Trade

Thomas Vollrath*

Introduction

The United States is concerned about economic growth in the developing world because our economy is becoming increasingly linked to developing-country income expansion.[1] The benefits of income growth in developing countries are striking for the U.S. agribusiness community because of the large potential for expansion in import demand for agricultural commodities which, in effect, exerts upward pressure on international prices and enlarges the volume of agricultural trade. During the 1970's, the most rapid growth in agricultural imports occurred in the fastest growing developing countries; the lowest rate of increase occurred in the poorest and slowest growing developing countries.[2] Intermediate growth of agricultural imports characterized the centrally planned and developed market economies.

A major challenge confronting U.S. policymakers is how best to facilitate greater reliance on the market mechanism as a means for releasing the growth potential within developing countries. One relevant concern, from the U.S. agricultural sector's perspective, is how this country can use its commercial policies to assist development abroad while promoting U.S. agricultural exports. Another concern is the implications for U.S. agriculture of changes in the pattern of global production and in the commodity composition of world trade because of agricultural development and economic growth in developing countries.

Knowledge of the nature of international exchange and the dynamics of the global economy is crucial to the creation of appropriate policies and programs which activate economic transformation and growth. This study analyzes the economic forces underlying international exchange and provides illustrations of how trade impacts upon development and growth.[3] The underlying purpose is to provide a better understanding of when trade is beneficial to both developed and developing countries and how it can be made more useful through formulation of effective commercial policies in all countries.

Background

Trade and development statistics demonstrate that the global economy is becoming increasingly interdependent. From 1962 to 1980, world trade (exports plus imports) increased more than world gross domestic product (GDP) every year except 1975. The 1970's brought particularly rapid growth of economic interdependence. Ratios of the total value of exports to the total value of GDP, indicators of economic reliance upon the international market, show that the average country more than doubled its dependence on international exchange in 1980 compared with 1970 (fig. 1).

Many developing countries have consistently relied more on foreign markets than have industrialized countries because of former colonial ties. For example, 18 percent of developing countries' GDP moved into the international market in 1960, while 12 percent of the industrialized countries' GDP went to exports.

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[1]Developing countries represent a sizable and growing outlet for American commodities. In 1981, for instance, developing countries absorbed 37 percent of the value of all U.S. exports, while the European Community and Canada earned 22 and 16 percent, respectively (43). Italicized numbers in parentheses cite sources listed in the Bibliography section.

[2]During the 1970's, the fastest growing developing countries (countries which either had already attained or were approaching middle income status and whose income growth averaged 3.7 percent per year between 1970 and 1980) had the largest rate of increase in agricultural imports of any other country grouping (35, pp. 114-119). The fastest growing developing countries accounted for 30 percent of the increase in cereal imports in the 1970's; by contrast, the poorest and slowest growing developing countries, with per capita incomes below $370 (1978 dollars), accounted for only 3 percent of the growth in cereal imports.

[3]Development is a transformation process involving change in the organizational structure of institutions. It is related to specific improvements, such as increased knowledge, awareness, and material well-being, which enhance the quality of life. The essence of growth is increased real income. It is the result of structural transformation of the economy involving both the adoption of modern technology as well as the reallocation and often increased use of resources. Economic transformation in production occurs in response to the changing nature of demand. Structural growth involves capital formation, technical change, and reallocation of resources.

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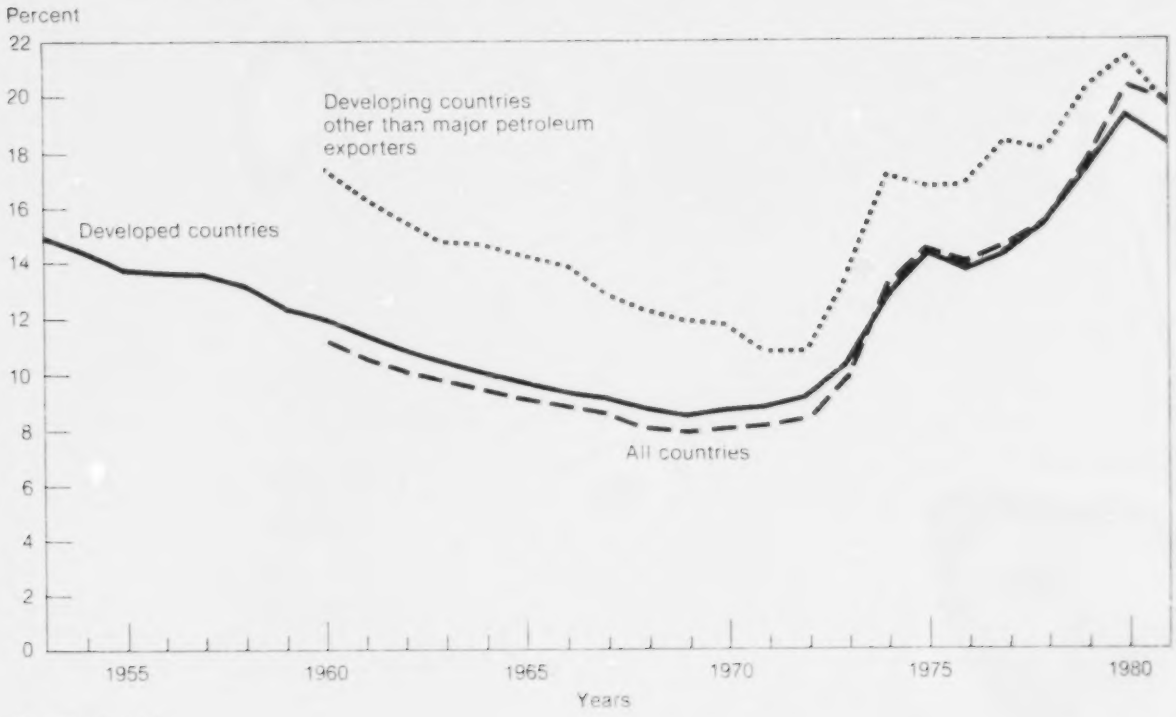
Figure 1—**Ratio of exports to gross domestic product**



Sources (13, 14, 43)

However, many developing countries adopted import substitution development policies during the 1950's and 1960's in an attempt to accelerate industrialization, development, and economic independence. These inward-oriented policies produced a rapidly declining reliance on foreign markets until the early 1970's. By 1972, the developing countries' dependence upon the international economy about matched that of the rest of the world. But the adoption of import substitution policies in the developing countries led to high-cost enterprises and overvalued exchange rates which harmed domestic agriculture and slowed the pace of economic development and growth.[3] The industrialized developed countries integrated their economies into the world market more thoroughly than did the developing countries between 1960 and 1980 (based upon changes in export-to-GDP ratios). This suggests that the developed countries made better use of their trade sector in promoting domestic economic growth than did the developing countries during 1960-80.

[3]Little, Scitovsky, and Scott concluded this after an evaluation of the economic policies and performance in seven developing countries (25). Krueger and Bhagwati arrived at similar conclusions after having coordinated a large research project for the National Bureau of Economic Research involving analyses of the relationship between foreign trade regimes and economic development in 12 developing countries (21, 7).

Exports, Foreign Economic Development, and Domestic Prosperity

Consumers in both the United States and in developing countries should be concerned not only about the health of their own economy, but the well-being and expansion of each other's economies because of the creation of economic synergism. Here, economic synergism relates to the additional wealth created whenever exchange takes place that would not be possible under isolation.

The engine of growth for developing countries is growth in the developed countries (23, 43). A remarkably stable relationship exists between growth in the developed world, trade in primary products, and growth in the developing countries. Lewis calculated that the rate of world trade in primary products was 0.87 times the growth in industrial production throughout a 100-year timespan (24).[4] He noted that when developed countries grew rapidly, the developing countries also grew rapidly, and when the developed countries grew slowly, so did the developing countries. Lewis concludes that trade has been a principal factor linking developing countries' economic performance to economic growth in the developed countries.

[4]Lewis's timeframe began in 1870 but excluded World Wars I and II and the Great Depression.

Economic well-being in the developed world is also related to economic prosperity in the developing countries. U.S. exports to nonoil-producing developing countries, for example, increased 63 percent in real terms between 1975 and 1981, contributing to increased income in the United States (table 1). A very large potential for increased import growth exists in developing countries because their demand for many foreign goods, including most agricultural commodities, responds to income growth. This means that as per capita incomes rise, developing-country consumers will undoubtedly increase purchases of food grains and feed grains from abroad. Economic growth within developing countries enables them to pay for these desired imports. This is significant because economic growth and expansion in the demand for imports in the developing world translate directly into greater demand for commodity exports from the developed world which generates employment and, in turn, increases incomes in developed countries.

Resource Use and Economic Well-Being

Trade often enhances economic well-being because it permits better use of land, labor, and capital. It enables countries to specialize in the production of goods that use resources which are relatively abundant domestically, exchanging them for imported commodities containing raw materials which are relatively scarce domestically.

American wheat and Brazilian coffee provide an example of the advantages of specialization and exchange based upon comparative resource endowments. Brazil has a relatively high land/capital ratio and a climate and terrain that is conducive to coffee production. The United States, by contrast, has a relatively high capital/labor ratio and possesses the central Great Plains suitable for wheat production. Unique economic and institutional arrangements have evolved in both countries which take advantage of their relative resource endowments. Brazil specializes in coffee production, producing it on both plantations and numerous smallholder operations of 5 hectares, the latter providing labor to the former. The United States concentrates many resources on wheat production, using heavily capitalized and often large-scale mechanized farms. Wheat has become a major export commodity in the United States, while coffee has become one of Brazil's principal sources of foreign exchange earnings.

International trade has facilitated better use of world resources since the mercantilistic era in the 1850's when developing countries first began to export primary products to industrialized countries in exchange for manufactured imports not available domestically. Today, the fact that many of the primary products exported by developing countries can only be grown in tropical zones means that even though these countries may have a comparative advantage in agriculture, their production does not compete with most agricultural goods produced by the developed countries. Important nonfuel primary commodities exported by developing countries include cocoa, coffee, tea, bananas, spices, copra, groundnuts, palm oil, coconut oil, jute, natural rubber, sisal, silk, copper, bauxite, and natural phosphates. These commodities are largely noncompetitive with goods produced in the developed world.

Increased specialization has spread in world agriculture. The developing countries' share of primary noncompeting tropical exports to total nonfuel primary exports rose from 34 to 39 percent between 1962 and 1975. This changing market share coincides with an expansion in developing countries' imports of food and feed grains. One may conclude, therefore, that relatively few conflicts exist between the United States and developing countries regarding agricultural production and trade.

But, a sudden surge in foreign demand for U.S. exports of agricultural commodities increases prices U.S. consumers

Table 1—Trade between the United States and nonoil-producing developing countries, 1975-81

Year	U.S. exports to nonoil-producing developing countries		Percentage of total U.S. commodity exports to nonoil-producing developing countries	Nondeveloping-country exports to the United States		Percentage of nonoil-producing developing-country exports to the United States
	Million dollars (current dollars)	*(1980 dollars)*	*Percent*	*Million dollars (current dollars)*	*(1980 dollars)*	*Percent*
1975	24,565	43,310	23	21,619	38,468	18
1976	29,522	51,884	26	27,584	48,478	19
1977	36,156	58,410	30	32,738	52,889	19
1978	42,669	62,656	30	36,821	54,069	19
1979	53,337	63,648	29	45,261	54,011	18
1980	64,985	64,985	29	56,390	56,390	18
1981	69,935	70,570	30	63,522	64,099	20

Source: International Monetary Fund, *1982 Yearbook, Direction of Trade Statistics.*

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must pay for many food items. How can this situation be beneficial?

The basic exchange version of neoclassical trade theory demonstrates the benefits of exchange within countries that open their borders to international trade, even though production is assumed constant. This austere, but significant, description of the consequences of exchange is consistent with the notion that a shift toward free trade results in consumers having to pay higher prices for goods domestically produced and exported than prior to international exchange. However, prices of other goods, notably imported commodities, decline. The net result of a movement to an open economy from autarchy (a policy of national self-sufficiency and nonreliance on imports or economic aid) is that overall product prices decline and that real incomes increase, enabling consumers to purchase more goods and services than they previously could.

Empirical observation confirms the validity of this theory. Following repeal of the Corn Laws in 1846, the English household had to endure higher prices for British commodity exports, namely textiles, coal, and iron. But, this event induced not only lower food prices but also a general decline in British consumer prices. Moreover, it marked the beginning of the mercantilistic era of greatly expanded trade and impressive income growth.

South Korea provides a contemporary example. The domestic price of fish rose more than 60 percent compared with the price of cereals between 1970-74 and 1978-82. South Korean households endured higher real prices for fish during 1978-82 primarily because fish exports, which had quadrupled in quantity, bid up domestic prices. Meanwhile, they paid less for cereals because imports had more than doubled.

The South Korean economy has been virtually transformed as a result of active participation in the international market. Initially, the textile industry was the primary source of foreign exchange earnings; today, it is electronic equipment. Total South Korean exports reached $22.5 billion by 1980, increasing almost nine times in real terms since 1970. Accompanying this rapid trade expansion were impressive increases in income. Between 1970 and 1982, per capita income increased 165 percent, from $615 (1980 dollars) to $1,611.

Changes in Economic Efficiency

International exchange increases economic efficiency because more economies of scale can be realized with trade than without it.[6] Export-producing industries can lower per unit costs by constructing optimally sized plants which would be too large and, hence, uneconomical should market demand be restricted to the domestic economy. Lower export prices benefit not only domestic producers who are able to capture a larger share of the world market because they have become more competitive, but these prices also benefit domestic consumers who pay less for commodity exports they consume.

For example, in the early 1970's, construction of optimally sized citrus operations enabled both Israel and Egypt to gain access to the European market formerly dominated by producers in Southern Europe. These two countries entered an established market and became both technically and economically competitive as a result of exposure to the world citrus economy. The possibility of penetrating traditional markets through improvements which lower costs is important for many developing countries whose growth prospects exist primarily in agriculture.

Another way exports promote economic efficiency is by encouraging competition. Monopolistic elements rise less frequently in a free trade environment than in an autarchic atmosphere. Because monopolistic prices are comparatively high, and thus the quantity of goods available for purchase in local markets relatively low, exposure of domestic industries to the international market heightens consumer well-being by increasing competition and inducing structural changes which eliminate monopolistic profits.

Trade also stimulates growth because it encourages technological change which leads to increased longrun economic efficiency. International competition induces innovative activity as it provides producers with informational feedback and constraints in the form of market signals. During the 1960's, for example, cocoa hacienda owners in Brazil became worried about possible African competition. Brazil levied an export tax on cocoa in order to finance research and development on cocoa production. This resulted in improved technology which enabled Brazilian producers to retain their competitive edge in the world cocoa market.

Imports and Economic Development and Growth

Imports of both consumer goods and inputs used in production can enhance society's well-being. Many factor inputs, required to modernize agriculture and to alter the structure of the nonagricultural economy, must be imported because they either cannot be domestically produced or are too costly to be manufactured locally. Africa, for example, is the largest supplier of rock phosphate to the rest of the world. Importing phosphate from Morocco, Tunisia, Togo, and other countries in Africa is a critical factor explaining increases in agricultural production and productivity in many developed countries.

Shortages of human and physical capital, such as skilled workers and modern machinery, constrain production in

[6]Economies of scale denote lower costs in producing a commodity unit because savings result when the size of the plant and scale of operation become larger.

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many developing countries. Some of these constraints, however, can be partially relieved through importing capital from the developing world.

Imports of foreign agricultural commodities are beneficial to consumers in agricultural exporting countries. Global well-being increases whenever actual trade flows approach the pattern of comparative advantage. Basing trade upon comparative advantage means that the distribution of world production is determined by relative cost advantages. Free trade causes domestic resource prices in both developed and developing countries to be set in accordance with international prices, ensuring efficient use of world resources.

When countries have closed economies, resources are not used efficiently and domestic goods are produced at prices which do not conform to the existing international price structure. As a result, consumers often pay more for commodities which are produced locally but which would be imported under liberalized trade. This diminishes societal well-being because higher consumer prices for importable commodities can significantly decrease real income and consumption.

For example, the European Community (EC) exports grain to the rest of the world, but the average price European consumers pay for agricultural goods is higher than elsewhere in the developed world because the Common Agricultural Policy (CAP) protects and insulates EC farmers from foreign competition. Average domestic prices for EC agricultural goods exceeded international prices by more than 150 percent between 1967-80, curtailing consumption below what it would have been under a more purely competitive situation. Consumers throughout the world, and particularly those in Europe, would benefit from a reduction in the level of CAP protectionary subsidies.

Agricultural imports enhance domestic economies as witness the impressive growth of agricultural trade which doubled in real terms between 1961 and 1981. This expansion resulted in increased specialization of agricultural production, especially in developing countries where primary interest was often focused on tropical crops. Many developing countries substantially increased preferred food grain imports to fill the gap created when domestic consumption needs outstripped local production because resources in developing countries had either shifted out of agriculture or away from staple foods and toward cash crops grown only in tropical zones.

Developing countries imported about 1.5 percent of their total consumption of basic food staples during the mid-1960's. Ten years later, the proportion of imports to consumption had increased significantly, equaling 5 percent. Mellor anticipates that by the year 2000, the developing countries will import about 8.5 percent of their total consumption of food staples (27, pp. 2-3). He notes that while "agricultural exports to developing countries may be a small fraction of the action, the action is going to be so huge that this small fraction is going to be significant."

A rising ratio of food imports to total food consumption has induced relative food prices to fall in most developing countries, benefiting developing-nation consumers and many farm producers in the United States. The increase in food grain imports enabled consumers in developing countries to experience the benefits of technological change and increases in agricultural productivity which had occurred in North America and Oceania.

Yet, while food trade deficits are common in the developing world, most developing countries have a net agricultural trade surplus because of such nonfood commodity exports as coffee, tea, cocoa, and rubber. The United States, which is the second largest importer of agricultural goods (after Germany), is an important market for developing countries which export agricultural commodities. Increased U.S. imports of agricultural goods from the developing countries enhance the welfare of both American consumers and developing-nation farmers just as developing-country agricultural imports from the United States augment the well-being of the developing-nation consumer and the U.S. farmer.

The Special Challenge of Import Competition

Despite the mutual benefits of agricultural trade between the United States and developing countries, some potential conflicts exist whenever traded commodities can be substituted for domestic production. How could this competition possibly be good for the agricultural industry in either the United States or affected developing countries?

Competition in open markets permits price to act as the primary mechanism for allocation and use of the world's resources, promoting efficiency, growth, and enhanced consumer well-being. The likelihood of increased foreign entry into an established market provides incentives for producers, both at home and abroad, to become increasingly efficient, which decreases costs to all consumers.

The comparative resource cost structure may, in fact, dictate that certain agricultural enterprises eventually be concentrated in foreign countries where gains in technical efficiency can be more readily translated into economic benefits. The possibility that developing countries can penetrate large markets through adoption of modern technology and improvements in supply is particularly appealing to them because many alternate sources of growth (especially in agriculture) depend on expansion of foreign demand over which these countries have little or no control.

A foreign multiplier-accelerator income effect accompanies increased agricultural imports from the rest of the world. This multiplier-accelerator gauges the net impact of increased foreign imports on home income after domestic

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equilibrium has been restored in all product and factor markets. Thus, heightened prosperity in developing countries from increased agricultural exports to the United States enables those countries to buy additional imports, a large proportion of which will be food grains and feed grains. Increased developing-country demand for agricultural imports increases income and generates employment in net grain-exporting countries like the United States.

Increased competition and foreign penetration in established agricultural markets is likely to lead to declining local economic activity in these markets unless, of course, demand accelerates substantially, accommodating not only increased imports but sustaining domestic production. In a relatively more open and dynamic international environment than currently exists, some farmers in both the United States and in developing countries may have to reallocate their resources and produce a different mix of agricultural commodities for which their country possesses a comparative advantage. The policy challenge is to devise appropriate compensation to producers hurt by foreign competition in order to mitigate painful adjustments and to facilitate structural change which results in more productive economic activity benefiting both general consumers and specific producers.

Import Protection of Mature Industries

Protection of mature industries, whether agricultural or manufacturing, is nearly always extremely difficult to justify from the society well-being perspective. The sudden emergence of financial difficulties may very well indicate the inability of industry to make the necessary adjustments to remain comparatively efficient. The adoption of protectionary measures often provides only temporary relief because relatively low factor returns and weak product demand are likely to continue to plague an inefficient industry in the future.

Legislation that restricts competition may increase employment in protected industries. But, wage rates are likely to be lower in the sheltered industries than elsewhere, placing a drag on the general wage level throughout the country. Consumers are confronted with higher prices, and inflation is likely to increase should additional protective measures be undertaken.

Developing countries that export basic manufactures which receive protection in the developed world would be forced to scale back their imports (many of which originate in the United States) because of inadequate supplies of foreign exchange, lowering U.S. income and employment. Some of the developing countries would be less able to pay off their international loans because of restrictions which prevent their exports from entering the United States. This could be detrimental to the international banking system and to the U.S. commercial banks which have many loans outstanding in developing countries.

Protectionism may be justified when the target is development of an infant industry which has a capability of becoming economically efficient in the long run. Other than the ethical issue of whether it is fair to defend one group of wage earners' income and employment while not protecting others, there is little wrong with helping the growth of infant industries via protectionism, provided it is temporary.

Justification of protection for agriculture on the basis of the infant industry rationale is not generally warranted, however, because agriculture is not a new economic activity. One possible exception is Africa where public policies have so distorted prices and the general incentive structure that farmers have sharply curtailed production. Adopting a more favorable commercial policy could redress previous mistakes, spurring African economic growth.

Growth based upon intervention and preferential treatment is potentially hazardous. Nonmarket-determined prices often become institutionalized, producing an artificial environment difficult to alter. Protected environments create vested interests that tend to endure, frequently leading to abuse which proves to be very costly in the long run. Moreover, backlashes usually follow adoption of a protective trade orientation. One response is a policy-induced reaction of retaliatory protectionism on the part of other countries, which constricts world trade and economic well-being.

The Great Depression illustrates what can happen under extreme circumstances. In an effort to stimulate the domestic economy, Congress passed the Smoot-Hawley Trade Act in 1933 which raised tariffs protecting domestic industry, making it increasingly difficult for other nations to export commodities to the United States. Many foreign countries then exported less to the United States, imported fewer goods from the United States, and began to default on their international loans, which stifled economic activity and lowered both income and employment in the United States and throughout the world.

Since World War II, protectionism (hence, distortions) in agriculture has risen, while it has decreased in manufacturing because of more market orientation in industry. In Western Europe, estimates on the average nominal rate of agricultural protectionism have risen from 38 percent in 1956-57 to 47 percent in 1963-64 and 62 percent in 1968-69 [12]. Preliminary calculations indicate that the average nominal rate of protection in Western European agriculture rose to 81 percent by 1976-77. Agricultural protectionism is also rising elsewhere, most notably in East Asia. By 1980, internally protected food prices in Japan, South Korea, and Taiwan averaged two to three times international levels, rivaling those in Western Europe.

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During the 1960's and 1970's, the foundation for much of the expansion of trade and associated increases in real world income was the General Agreement on Trade and Tariffs (GATT) which reduced manufacturing tariffs multilaterally (19, p. 865). Diminished protectionism in manufacturing enabled the price allocation mechanism to operate more effectively, facilitating appropriate structural adjustments between the domestic and international markets. Progress toward liberalizing agricultural trade would also improve the efficiency with which global resources are used, adding further to increased world income.

International Trade and Economic Stabilization

The impact of internal production shortfalls in one part of the world can be mitigated through international exchange with another part of the world experiencing surplus production. As a consequence, a shift toward a more open economy often has a stabilizing influence on domestic economic performance.

Increased reliance upon the international market can stabilize economies because world output fluctuates less than individual country production. Statistical evidence on grain production, for instance, supports the contention that the international market is a source for stabilizing both consumer prices and income. Donaldson found that the coefficient of variation for grain production is smaller worldwide than for most individual countries (9, p. 188).

The international economy cushions the effect of internal shocks that occur within a country. Unexpected events, such as a sudden change in weather, for example, can severely disrupt domestic food production. However, food imports can diminish the tendency for internal prices to rise and for consumption to fall by balancing domestic demand with normal supply whenever there is a temporary slack in local production. Even during the food crisis years of 1973-74 when the world supply of agricultural goods was tight, developing countries were able to buy as much foreign-produced grain as they could handle and distribute, albeit at increased traded prices. Agricultural imports by developing countries throughout this period prevented domestic prices from rising as high as they would have in the absence of exchange.

The increased instability of domestic earnings sometimes surfaces when a country's economy becomes more open. Protection of industries in countries overseas can prevent smooth functioning of the international market causing disruptions in national economies dependent upon trade. Narrow considerations frequently influence a country's commercial policy because conflicts among vested interest groups and advocates of enlightened trade policies (who are interested in seeing that social well-being is maximized) are often resolved in favor of those groups where individual gain is comparatively greater.

Articulate producer groups within the EC, for example, are largely responsible for the establishment of the CAP. One instrument used in the EC to achieve these objectives is the variable levy system whereby major imported commodities are sold to wholesalers at levels just above target prices, the latter established to guarantee reasonable producer returns. Another instrument used is a restitution, or export subsidy, which is equivalent to the difference between world market prices and EC prices which enables European producers to compete on the world market. The practice of imposing variable import levies and export restitutions effectively transfers internal European production and price instability to the rest of the world.

The problem of fluctations in domestic income is exacerbated whenever the domestic economy absorbs external disturbances. Increased reliance on global markets can lead to greater price and income instability for producers of selected traded commodities. However, development and improvement of commercial links in developing countries with major future exchange markets in the developed countries represent a feasible way to reduce externally induced instability problems (39). Eighty percent of all primary commodities have established futures markets. But, all the major exchanges, except those in Kuala Lumpur, Singapore, and Hong Kong, are in the developed world. Increased development and use of futures trading markets provide, nevertheless, a promising market-oriented solution to income instability problems that arise because of fluctuations in traded commodity prices.

Comparative Advantage and Its Significance

Comparative advantage is determined before trade, using undistorted prices. It relates both relative domestic and foreign demand to relative domestic and foreign supply. Relative demand is the demand for a particular good compared with the demand for another commodity; and relative supply is the supply of a particular good compared with the supply of another commodity. In economic theory, a country has a comparative advantage in producing a particular good whenever its relative demand and relative supply intersect below the juncture of the comparative foreign demand and the comparative foreign supply (fig. 2).

In figure 2, the home country has a comparative advantage in producing food compared with clothing as shown by the relative domestic price for food (P^{df}/P^{dc}), which is lower than food's relative price elsewhere in the world (P^{ff}/P^{fc}). Conversely, the home country has a comparative disadvantage with the rest of the world in producing clothing rather than food as shown by the intersection of its domestic relative demand (D^{df}/D^{dc}) and its domestic relative supply (S^{df}/S^{dc}) below the intersection of the

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foreign relative demand (D^{ff}/D^{fc}) and the foreign relative supply (S^{ff}/S^{fc}).

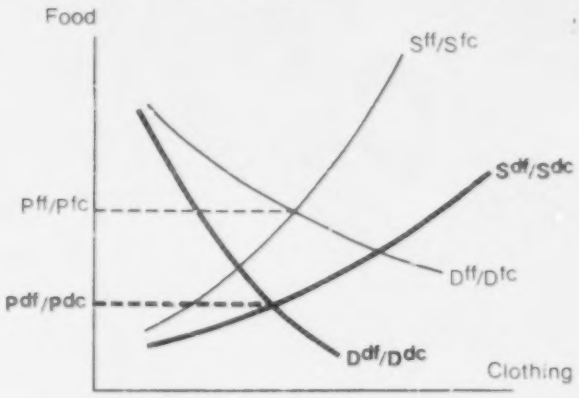
Trade theory shows that countries will export commodities making relatively intensive use of the factors of production that are relatively abundant. Comparative advantage is determined by a country's availability of land, labor, and capital compared with resource endowments in the rest of the world. A country that has an abundance of land compared with its supply of labor and capital will have, for example, a comparative advantage in producing agricultural commodities that require comparatively large amounts of land, such as livestock and forestry products. Similarly, a country, such as Japan, that has a relative abundance of labor and capital compared with its supply of land will have a comparative advantage in producing and exporting commodities, such as automobiles, which require a comparatively large amount of labor and capital.

Trade theory also shows that the pattern of trade will change in response to capital and other resource accumulations which alter relative factor endowments. The implication of the factor proportion explanation of trade, known as the Heckscher-Ohlin theorem, is that trade flows will change in response to additional capital and other resources which alter the pattern of relative factor endowments.

The economic mechanism through which changes in comparative advantage occur can be examined, assuming for expository purposes that agriculture's terms of trade decline. The Stolpher-Samuelson theorem, which relates commodity prices to factor prices within the Heckscher-Ohlin framework, shows that a fall in the relative price of labor-intensive agriculture must unambiguously lower real wages and just as unambiguously raise the real return to capital. We know that a decline in agriculture's purchasing power has a "magnified effect" upon increasing the rental/wage ratio (17, p. 9). Labor rather than capital has to bear proportionally more of the burden of agriculture's diminished price (which is employed comparatively less intensively in agriculture than labor) because capital returns are bid upward due to the relatively high returns capital receives in other sectors. Compensating capital in agriculture at lower than market prices would induce capital flight from the industry.

In the long run, however, the magnified change in relative factor prices, which is associated with declining terms of trade for agriculture, provides incentives for manufacturing output to increase relative to agricultural production. As a consequence, domestic, and very possibly foreign, capital will flow into manufacturing in developing countries where returns to capital rise. Labor will also be induced to move out of agriculture and into manufacturing, further increasing industrial production at the expense of agricultural production as hourly earnings in farming become lower than urban wages because of the greater intensity of capital in manufacturing activities.

Figure 2—**Comparative advantage and disadvantage, food and clothing**



Key

Pdf = domestic price of food
Pdc = domestic price of clothing
Pdf/Pdc = relative domestic price of food

Sdf = domestic supply of food
Sdc = domestic supply of clothing
Sdf/Sdc = relative domestic supply of food

Ddf = domestic demand for food
Ddc = domestic demand for clothing
Ddf/Ddc = relative domestic demand for food

Pff = foreign price of food
Pfc = foreign price of clothing
Pff/Pfc = relative foreign price of food

Sff = foreign supply of food
Sfc = foreign supply of clothing
Sff/Sfc = relative foreign supply of food

Dff = foreign demand for food
Dfc = foreign demand for clothing
Dff/Dfc = relative foreign demand for food

The mix of production activities in developing countries is likely to change naturally over time in response to shifts in relative commodity and factor prices. Dynamic comparative advantage involves a process whereby the optimal location mix of commodity production among countries changes in a way that is consistent with the changing proportions of land, labor, and capital available throughout the world. As a country relatively abundant in farmland pursues an investment path that is consistent with its longrun dynamic comparative advantage, it is, therefore, likely to refocus its production effort over time away from agricultural, livestock, and forestry products toward industries that take advantage of its increasing relative abundance of accumulated capital. Hence, the pattern of development changes over time.

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Changes in the pattern of comparative advantage affect the development process and the composition of production. Balassa's decomposition analysis on 184 product categories and their characteristics for 18 developed and 18 developing countries showed that intercountry differences in the structure of exports were largely explained by differences in physical and human capital (5). These findings confirmed the factor proportion explanation of trade and verified the dynamics of comparative advantage whereby the structure of exports, and also the domestic composition of production, changes with the accumulation of physical and human capital. The changing nature of comparative advantage underscores the importance of not distorting the system of incentives against commodities in which a comparative advantage either already exists or could be developed.

Structural Transformation and Economic Growth

The most significant role played by international trade may be that it reveals a country's comparative advantage, which is especially important to the growth process that avoids the creation of insulated, high-cost, inefficient sectors. Barriers that inhibit global exchange distort prices and prevent the disclosure of the composition of comparative advantage. When the impediments to trade are reduced, however, optimal production patterns are approached, more rapid economic growth takes place, and real incomes increase both at home and abroad.

Few disagree with organizing production based upon the concept of comparative advantage. According to this principle, a country should produce those commodities for which the relative domestic production costs (assuming they reflect real scarcities) are lower than the relative world prices of the same goods because net economic benefits from trade exist whenever relative real domestic costs are not equal to relative international prices.

A country will be on an optimal growth path when its economy is managed in a way that is consistent with its dynamic comparative advantage. This means that a country will be using its resources in a manner that is in the best long-term interests of its citizens. The country's land, labor, and capital resources will be earning, over time, higher rates of return than if the economy were on another growth path. Policymakers must accurately assess the world economy because changes in both domestic and foreign commodity demand and supply determine the pattern of future comparative advantage. Investment decisions based upon a reasonable perception of both existing and future internal demand and supply as well as external demand and supply induce economic growth because the dynamics of comparative advantage have been correctly identified.

Trade that is based upon comparative advantage can exploit a country's inherent potential for growth by providing attractive incentives for increased production. Moreover, greater reliance upon the open market makes the foreign exchange constraint less influential because trade-induced diversification and expansion of export supply render the economy internationally competitive and capable of importing both needed and desired goods and services.

A Strategy for Stimulating More Rapid Economic Growth in Developing Countries

Krueger says that "trade policy affects the course of economic development far more profoundly than a naive interpretation of the theory of comparative advantage would suggest" (20, p. 1). The dynamics of comparative advantage and its relationship to economic growth are largely ignored. Attention often is focused upon differences in social well-being among optimal and nonoptimal policies but only within a limited period. Little is said about how nonoptimal policies affect longrun economic development and growth, leaving the impression that the costs of protection are much smaller than they actually are when accumulated over time and across industries.

Both foreign and domestic policies have an impact on the developing-country growth process. In the developing countries, the widespread adoption of policies, such as tariffs, trade quotas, and licensing requirements needed to sustain the import substitution objective caused exchange rates to become too strong during the 1950's and 1960's. These overvalued exchange rates subsidized developing-country manufactured imports and raised the foreign currency price of their exports. These developments often penalized developing-country agriculture, contributing to a deterioration in external terms of exchange. Developing countries can stimulate internal growth by encouraging a more sophisticated orientation towards the international market.

The United States imposed import quotas on selected agricultural commodities when domestic price supports were above world market-clearing levels. This action prevented some developing countries from obtaining effective access to the large U.S. market and tended to curtail their exports. This may have depressed developing-country commodity export prices, lowering foreign exchange earnings and diminishing the ability to purchase foreign commodities.

The United States can facilitate growth and development in developing countries while enhancing its own welfare by removing trade restrictions which protect domestic activities where a comparative advantage clearly exists in developing countries. Examples of industries in which protectionism in the developed world discriminates against developing countries are found in such areas of agriculture as sugar, rice, oilseeds, and meats as well as in low-skilled or established areas of manufacturing, such as clothing, shoes, and steel.

The United States also should persuade other countries to promote further liberalization of agricultural trade. This

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would have particularly favorable implications for increasing farmer returns in both the United States and most developing countries because all countries possess unique comparative advantages.

Conclusions

Trade opens global communication between consumers and producers, resulting in additional exchange and more efficient use of resources. Exposure to the world market guides the internal growth process along an efficient path of development because the international price mechanism induces changes in production that more closely approach economic optimality. Countries generally experience more rapid structural transformation after having implemented an outward, trade-oriented economic policy. Domestic efforts to establish closer links to the international market and to become more responsive to the world economy are, therefore, cost-effective approaches to development.

A country's active participation in the international market and increased exposure and dependence upon the world economy does not, of course, assure economic growth. But, international exchange can be a constructive force in the complex development and growth process. The most important function performed by liberalized trade is that it helps identify which commodities a country should produce and trade. International trade becomes a catalyst to development by unleashing market forces which promote economic growth.

Whenever a country trades freely in the international market, domestic prices become aligned with world prices and the nation becomes increasingly integrated into the global economy. The result is that the pattern of a country's comparative advantage is disclosed and it becomes better able to use not only national resources but to take advantage of differences in factor endowments, technologies, and changing commodity demands throughout the world. Development and growth occur in the process of adjusting internal prices to external prices. Real per capita income increases because of improved resource use, additional economies of scale, innovation, modern technology, lower commodity prices, and increased commercial availability of a wider variety of consumer goods.

The trading relationship the United States establishes with developing countries is crucial for future economic interests, affecting income growth not only in these countries but throughout the U.S. economy and most notably in agriculture.[7] Today, most developing countries are net exporters of agricultural goods. However, these countries will substantially increase purchases of agricultural commodities, for which they do not possess a comparative advantage, as they experience economic growth. Developing-country import demand for agricultural commodities is very responsive to the availability of foreign exchange and increases in the ability to pay for foreign goods. Increased agricultural and nonagricultural exports from the developing world relax the foreign exchange constraint which inhibits developing-country demand for all imports, and especially for food grains and feed grains, a significant proportion of which will originate in the United States.

Trade barriers can pose serious obstacles to economic prosperity in both the United States and the developing countries. Protectionism may thwart international competition, serving shortrun special interests rather than the well-being of society at large. Increasingly, countries are resorting to unofficial and informal restraints of trade which circumvent the spirit if not the letter of GATT agreements. It may be in the self-interest of the United States not only to dismantle existing trade barriers which act against imports from developing countries but to encourage other countries, both developed and developing, to become more open to free trade.

[7] As recently as the 1930's, Asia, the USSR, Eastern Europe, North Africa, and the Middle East were net exporters of grain, but all have since become net importers, benefiting the United States which has a comparative cost advantage in agriculture and which is a world supplier of grain (10).

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